

REMARKS

Summary Of The Office Action & Formalities

Claims 1-6 are all the claims pending in the application. By this Amendment, Applicant is canceling claims 2-6, amending claim 1, and adding new claims 7-9. No new matter is added.

Submitted herewith is a Petition for Extension of Time with fee.

Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

Applicant also thanks the Examiner for initialing the references listed on form PTO/SB/08 submitted with the Information Disclosure Statement filed on November 26, 2003.

Claims 1 and 6 are objected for the reason set forth at page 2 of the Office Action. Applicant is amending the claims to overcome this rejection.

The prior art rejections are summarized as follows:

1. Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miura et al. (USP 6,549,290) in view of Saeki (USP 5,740,034).

Applicant respectfully traverses.

Claim Rejections - 35 U.S.C. § 103

1. Claims 1-6 Over Miura et al. (USP 6,549,290) In View Of Saeki (USP 5,740,034).

In rejecting claims 1-6 over Miura et al. (USP 6,549,290) in view of Saeki (USP 5,740,034), the grounds of rejection state:

Regarding claims 1, 3, and 6; [Miura et al.] discloses an inspecting device for inspecting a semiconductor wafer, comprising:

- a holding unit (27 of figure 5) for holding a wafer (21 of figure 5);
- an observing unit considered to be an optical instrument/ a wafer inspection microscope (col. 4 lines 5-10 and 26-30) having an AF autofocus (42 of figure 1), an objective lens (41 of figure 1 or figure 4) for magnifying and observing fine patterns (A and B of figures 7, 9, and 12A-12C) on the wafer (21 of figure 5), wherein the observing unit (41, 42 of figure 1 or 40 of figure 5) disposed at a position where the wafer (2 of figure 1 or 21 of figure 5) held by the holding unit (27 of figure 5) can be observed;
- a moving unit (24, 23, 22 of figure 4-5) which relatively moves the holding unit (27 of figure 5) with respect to the observing unit (118 of figure 1 or figure 4); and
- a control unit (37 of figure 5) for controlling the moving unit (22, 23, 24 of figure 5) to move the holding unit (27 of figure 5) based on obtained position data (figure 6) so that the fine patterns (figure 7) at a desired position can be observed. See figures 1-15.

Miura et al teaches all of features of claimed invention except for the moving unit having a rotating unit which relatively rotates the holding unit with respect to an aligner unit and control unit controls the rotating unit to rotating the holding unit at every predetermined angle and the aligner unit detects the cutout position or notch and the center position by obtaining distances from a rotational angle. However, Saeki teaches that it is known in the art to provide the moving unit (32 of figure 4) having a rotating unit (40, 36 of figure 4) which relatively rotates the holding unit (42 of figure 4) with respect to an aligner unit considered to be a detection means (34 of figure 4) and control unit (58 of figure 4) controls the rotating unit (40, 36 of figure 4) to rotating the holding unit (42 of figure 2) at every predetermined angle (figure 10 from 0 degree to 360 degrees) and the aligner unit (34 of figure 4) detects the cutout position or notch (WN of figure 3) and the center position (OW of figure 3) of wafer (W of figure 3) by obtaining distances from a rotational angle (figures 14-17). See figures 1-22.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify inspecting device for inspecting a semiconductor wafer of Miura et al with the moving unit having a rotating unit which relatively rotates the holding unit with respect to the aligner unit and control unit controls the rotating unit to rotating the holding unit at every predetermined angle and the aligner unit detects the cutout position or notch and the center position by obtaining distances from a rotational angle as taught by Saeki for the purpose of detecting notch or orientation flat of the wafer.

Regarding claim 2; Miura et al teaches that the moving unit (22, 23, 24 of figure 5) having a rotating unit (25, 26 of figure 5) relatively rotates the holding unit (27 of figure 5) and a horizontally moving unit (24 of figure 5) for moving the holding unit (27 of figure 5) with respect to the observing unit (118 of figure 1 or figure 5) in a substantially horizontally direction (24 of figure 5).

Regarding claims 4-5; Miura et al discloses the observing unit considered to be a wafer inspection microscope (col. 4 lines 5-10) having a photograph unit considered to be an autofocusing unit (40 of figure 5), an objective lens (36 of figure 5) for magnifying an image of the fine pattern of the wafer (21 of figure 5) and a lens barrel (118 of figure 1) having an eyepiece (col. 4 lines 26-30), and the control unit (12 of figure 1) is coupled to a photograph unit considered to be an autofocusing unit (40 of figure 1) for controlling the moving unit (22, 23, 24 of figure 5) to move the holding unit (27 of figure 5 or 1 of figure 1) based on the image captured by the autofocusing unit (40 of figure 1) and a computer considered to be an edge detecting circuit (39 of figure 5) coupled to operation circuit (38 of figure 5) for determining proper image of the wafer based on the image capture by the autofocusing unit (40 of figure 5).

Office Action at pages 2-5. Applicant traverses.

Miura et al. discloses a wafer position adjusting apparatus to be installed in a microscope having focus means for focusing using a laser beam. The apparatus adjusts a center position of the wafer by detecting an edge position using a laser beam and while moving the wafer in an

X-Y direction, and detecting a notch. The apparatus performs appearance inspection by the optical microscope.

With respect to amended claim 1, neither Miura et al. nor Saeki, whether considered separately or together, teach or suggest “a camera portion for photoelectrical capture,” “a control unit which controls the moving unit and the rotating unit to rotate and move the holding unit so as to position a mask ID of the wafer at a predetermined position within an observation field of the observing unit based on the obtained position data,” and “judging means for judging whether the mask ID of the wafer is appropriate by comparing image data which is photoelectrically captured by the camera portion and processed with stored reference image data of a mask ID”.

With respect to new claims 8 and 9, similarly, neither Miura et al. nor Saeki, whether considered separately or together, teach or suggest “a control unit which controls the moving unit and the rotating unit to rotate and move the holding unit so as to position the fine pattern of the wafer at a predetermined position within an observation field of the observing unit based on the obtained position data” and “judging means for judging whether the fine pattern of the wafer is appropriate by comparing image data which is photoelectrically captured by the camera portion and processed with stored reference image data of a fine pattern” (claim 8) or “machine executable algorithm that judges whether the fine pattern of the wafer is appropriate by comparing image data which is photoelectrically captured by the camera portion and processed with stored reference image data of a fine pattern” (claim 9).

In view of the foregoing differences, the Examiner is kindly requested to reconsider and withdraw the rejection of claim 1 and to allow newly added claims 7-9.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/721,381

Attorney Docket No.: Q78681

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Raja Saliba
Registration No. 43,078

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